Mitchell E. Daniels, Jr.
Governor

Judith A. Monroe, M.D.
State Health Commissioner

Indiana State Department of Health
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Recommended Pertussis Control Measures

Disease Information

Incubation Period: 7-10 days; rarely up to 21 days
Infectious Period: Prodrome onset to 3 weeks after paroxysm onset. Persons are considered non-infectious five days after starting antibiotic treatment. The disease is highly contagious and is spread by direct contact with secretions or face to face exposure.
Course of Illness: In children onset is insidious, with symptoms of URI (catarrhal stage) lasting about one week. Cough begins during the catarrhal stage and progresses steadily. The patient appears well between bouts of coughing (and the diagnosis may be missed). The classic symptoms include whoop, vomiting and apnea and may last 2-6 weeks. During convalescence, cough may persist many weeks. Adults may get mild pertussis (e.g., chronic cough > 2 weeks) without severe complications. Treatment and prophylaxis for adults is important to prevent disease in infants and young children.

Diagnostic Testing of Suspect Cases

The organism is most easily recovered from nasopharyngeal mucus in the catarrhal or early paroxysmal stages, and is rarely recovered after the fourth week of illness. It is recommended that both culture and DFA be done. False positive and false negative DFA results may occur. A positive culture is diagnostic, whereas false-negative cultures are common in patients receiving antibiotics. Because of difficulties with laboratory testing, clinicians often must make the diagnosis on the basis of clinical findings such as inspiratory whoop, post-tussive emesis and lymphocytosis. All symptomatic contacts to cases should be cultured prior to receiving antibiotic treatment, as well as all patients with an unexplained, sleep-disturbing cough. Special attention should be paid to infants, as well as adolescents and adults with mild illness that could represent pertussis. There is no charge for pertussis testing performed by the ISDH Laboratory. Pertussis test kits may be obtained by writing or calling:

Clinical Containers
ISDH Laboratories
635 N. Barnhill Drive, Room 13G
Indianapolis, IN 46202
317/233-8105, Email: containers@isdh.state.in.us

Directions for submitting specimens are enclosed in the test kit. For best results, pertussis specimens should be received in the ISDH Laboratory within 24 hours of collection (an overnight express is preferred shipping method). For assistance with specimen handling and shipment or test result interpretation, call the Special Reference Bacteriology Laboratory at 317/233-8040.

Recommended Action

Patients and Close Contacts: The preferred antimicrobial agents for treatment and prophylaxis of pertussis are the macrolides. Erythromycin, clarithromycin or azithromycin are appropriate first line agents for treatment and prophylaxis of pertussis. Please refer to the table at the end of this document for prescribing information by age group. Trimethoprim-sulfamethoxazole is an alternative antimicrobial agent for those who cannot tolerate macrolide therapy. Additional information on the use of antibiotics for the pertussis treatment and prophylaxis can be found in the CDC National Immunization Program's document entitled Guidelines for the Control of Pertussis Outbreaks, Chapter 3a. The American Academy of Pediatrics Report of the Committee on Infectious Diseases ("Red Book") states that "...older children and adults with mild illness that may not be recognized as pertussis can transmit the disease."

Vaccination of Contacts

In addition to chemoprophylaxis, all household contacts younger than seven years of age should be considered for immediate diphtheria, tetanus, acellular pertussis (DTaP) immunization according to the following criteria:

a. If the child has received no vaccine, give one dose and continue schedule.
b. If the child has received at least four doses of vaccine, give a booster now unless the last dose was given within three years.
c. If the child has received less than four doses and the third dose was six months or more before exposure, a fourth dose should be administered now.
d. All children should be brought up-to-date and maintained up-to-date as appropriate for age.

Additional Vaccination Recommendations

A booster dose of pertussis containing vaccine (Tdap) is available for persons 10-64 years of age. Tdap is now the recommended vaccine for use as a booster dose, replacing Td (tetanus-diphtheria) which has been used for many years.

Pediatric Unit Exposure in Hospitals/Physician Office

Case isolated by droplet precautions: Surveillance only.

Case mistakenly admitted into open ward, open room, etc.:

a. Chemoprophylaxis for staff with direct contact with respiratory secretions without wearing respiratory protection (e.g. face-to-face exposure during a paroxysmal coughing attack, performing a complete physical examination, including examination of nose and throat, suctioning the patient, intubation, bronchoscopy, or cardiopulmonary resuscitation).
b. Similar guidelines should be followed for prophylaxis of patients. Because neonates and young infants are extremely vulnerable to severe disease and complications, a more lenient definition of contact may be used (e.g. being in an enclosed room with a documented case for one hour or longer).
c. Case should be in droplet isolation.
d. Surveillance of ward for respiratory symptoms for 14 days

Close Personal Contacts

A close contact is defined as anyone who has had direct, personal contact with a person who has pertussis during the catarrhal and early paroxysmal stages of infection. This includes: ALL residents of the same household; and possibly daycare and baby-sitting contacts; and close friends, regardless of immunization status. The disease is very contagious and is spread by direct contact with secretions or face to face exposure.

Precautions for Day Care/School

Exposed children should be observed carefully for respiratory symptoms for at least 14 days. Symptomatic children should be excluded from day care/school pending a physician's evaluation. Children with pertussis, if their medical condition allows, may return after completion of five days of a 14-day course of erythromycin therapy or after 21 days of cough. Children who have recovered from culture positive pertussis should be administered DT vaccine for the remaining doses of vaccination. Some experts recommend including the pertussis component for subsequent vaccination of infants who have had culture proven pertussis because infants may have a suboptimal immune response following *Bordetella pertussis* infection.

Reporting

Report suspected and confirmed cases to your local health department or the ISDH at 1-800-701-0704 or after hours 317-233-1325. **Timely reporting is critical to the interruption of pertussis transmission.** The Immunization Program staff and local health department staff will assist, through follow-up, to identify and provide immunization and prophylaxis to close contacts who are at risk.

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Oral Macrolide Treatment and Chemoprophylaxis for Pertussis by Age Group

Agegroup	Erythromycin (14-day course)	Clarithromycin (7-day course)	Azithromycin (5-day course)
Adults	1-2 gm per day in 4 divided doses for 14 days	500mg twice daily for 7 days	500mg/day in single dose on day 1 followed by 250mg/day in a single dose on days 2-5
Children ≥6 months	40-50 mg/kg/day in 4 divided doses (maximum 2 gm/day) X 14 days	15 mg/kg/day in 2 divided doses (maximum 500mg/dose) X 7 days	10 mg/kg/day in single dose on day 1 (maximum 500mg) then 5mg/kg/day (maximum 250 mg) on days 2 –5
1-5 months	As above (estolate preparation preferred if available)	As above	10mg/kg/day in single daily dose X 5 days
<1 month	As above (Use as alternate drug in doses above. Drug use is associated with elevated risk of IHPS*)	Not recommended (Safety data unavailable)	**Preferred drug** 10mg/kg/day in a single daily dose X 5 days. Only limited safety data available.

TMP-SMZ may be used as an alternative agent in patients who are allergic to macrolides, who cannot tolerate macrolides, or who are infected, rarely, with a macrolide-resistant strain of *Bordetella pertussis.* The recommended dose in children is trimethoprim 8 mg/kg/day, sulfamethoxazole 40 mg/kg/day in two divided doses for 14 days. For adults, the recommended dose is trimethoprim 320 mg/day, sulfamethoxazole 1600 mg/day in two divided doses for 14 days. Because of the risk of kernicterus, TMP-SMZ should not be given to pregnant women, nursing mothers, premature neonates, or infants <2 months of age.

*IHPS – Infantile Hypertrophic Pyloric Stenosis

Adapted from "Guidelines for the Control of Pertussis Outbreaks," National Immunization Program, 2005.

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